REMARKS

As set forth at page 2 of the Official Action, the present application was subject to restriction under 35 USC §121 and §372. Applicant provisionally elected the claims in Group I; namely, claims 1-7 and 16-20 drawn to a method of dispersing pulp. This election was made with traverse as noted at page 2 of the Official Action during a telephone conversation on March 18, 2004. Affirmation of the election is made herein with traverse. In that regard, it is respectfully submitted that the inventions listed as Groups I and II do relate to a single general inventive concept as set forth in PCT Rules 13.1 and 13.2. In this regard, the Examiner is of the opinion that the claims in Groups I and II lack the same or corresponding special technical features because claim 8 is considered to be obvious over or anticipated by EP 931 584, and therefore the special feature linking the two inventions; namely, dispersing device having conical surfaces and a wheel (impeller as noted below) situated at the outlet of the blade opening is believed to be obvious or anticipated by EP 931 584. In particular, the Examiner's interpretation of conical surfaces (3, 3', 3", 4, 4', 4") in Figure 1 of EP 931 584 is believed to be incorrect since in Figure 3 of this EP document it is shown that the dispersing device does not have conical surfaces but a pyramidal tooth arrangement at constant radius from the rotational axis. The view in Figure 1 is a cross-section of the pyramidal teeth. It is therefore respectfully submitted that the restriction requirement is not proper in view of EP 931 584 since claim 8 is not believed to be obvious or anticipated by EP 931 584.

Referring now to the rejection of claims 1-7 and 16-20 under 35 USC §112, second paragraph, the objected term "between the conical surfaces" because "conical surfaces does not have an antecedent basis" has been corrected by amendment of claim 1. Furthermore, the term "running wheel" with regard to element 7 has been corrected to the word "impeller" which is believed to be a more appropriate translation of the original Finnish word "juoksupyörä" which appears in the priority application. Appropriate amendment has been made to the specification and claims to note that the term should be "impeller." No new matter is believed to be present since the drawing shows this element as an impeller in view of the description as set forth in the originally filed application. Thus, at page 5, lines 28-29, it is stated: "As the running wheel 7

revolves a flow is created and the pulp is blended in the dilution fluid." Further at page 5 at lines 31-33, it is stated: "The diluted pulp is transferred through flow channels 8 and the running wheel according to the principal presented in Fig. 2 to the outlet chamber 9." As used therein, it is clear that the running wheel is more appropriately termed an impeller, and this change is therefore not believed to introduce new matter. Further discussion concerning the operation of the impeller is presented with regard to Figure 2 and the corresponding description in the specification at page 5, line 5, through page 6, line 4.

Referring now to the rejection of claims 1-3, 16 and 20 as obvious over EP 931 584 in view of US Patent No. 5,733,412 (Markham et al.) or US Patent No. 4,865,690 (Bernard et al.), it is respectfully submitted that claim 1 as amended is distinguished over these cited references. More particularly, EP 931 584 describes a deflecting element 9 for turning the radially-emerging pulp into approximately an axial direction. This description presents a well-known state of the art in comparison to the present invention. The EP '584 publication relates only to guiding the flows while the present invention is particularly directed to the flow and the mixing of the mass associated with the flow. Furthermore, the '584 publication discloses a moving tool unit (2) which has a single radial projection (7). This arrangement does not extend axially into the working zone of the complementary tool unit (1); thus, the '584 publication does not have a similar effect of use of centrifugal force to the pulp mass, but only moving the pulp mass along the circumference of the rotating disc-type treatment tool. The EP '584 publication does not have or suggest conical blade surfaces (3) as disclosed and claimed in amended claim 1. It is therefore believed that the '584 publication does not have a similar effect to the process as the impeller of the present invention, and the whole idea of the '584 publication is believed to be different from that of the present invention as set forth in amended claim 1. In this regard, a copy of the claims of the EP '584 publication are presented herewith translated into English (see Attachment A).

As seen in Figure 1 of the present application, the rotational axis of the construction is horizontal and the flow of the pulp mass has both axial and radial directions through blade openings 5, the dilution of water has basically radial direction via flow channel 8, and these flows meet at the outlet chamber 9 creating a highly efficient mixing of the pulp mass. In view

of the present invention, it is believed that the other two cited references, Markham et al. and Bernard et al., do not make up for the deficiencies in the cited EP publication. Thus, Markham et al. presents at column 6, lines 17-35, that pulp is in the consistency of 25% at the pulp decker and then led through a pulp screw press. Then, when the pulp is in the bleach tower, the consistency of the pulp is 10%. It is unclear where this dilution actually occurs, and it does not give any hint or suggestion that it should be done as in the present invention. In Bernard et al., the process is performed in several steps, and if necessary returns to the previous step. It is also unclear how this teaching could lead to the present invention as set forth in amended claim 1. Overall, these two references, as well as the EP publication, are directed more or less to general conditions for treatment of waste paper and not to the method for dispersing pulp as set forth in amended claim 1. Therefore, amended claim 1 is believed to be distinguished over EP 931 584 further in view of Markham et al. or Bernard et al.

Because amended claim 1 is believed to be distinguished over EP 931 584 in view of Markham et al. or Bernard et al., it is respectfully submitted that the dependent claims thereto, namely, claims 2-7 and 16-20 are also distinguished over the cited art. In this regard, it is noted that claims 4-7 and 17-19 are rejected in view of EP 931 584 in view of Markham et al. or Bernard et al., further in view of US Patent No. 6,419,786 (Kurtz). For the reasons set forth above, it is believed that these claims are distinguished over the cited art in view of the unobviousness of claim 1. Furthermore, Kurtz states at column 5, lines 5-11, that water and steam can be selected as alternatives, and it is delivered through the conduit 27. In the context of the present invention, it is unclear whether the steam or water should be brought into the dispersing unit at the beginning, in the middle or at the end of the process. In the figure of Kurtz, the conduit has several feeding points along the path of the feeding screw, and is thus unlike the present invention.

In view of the foregoing, it is further believed that claims 4-7 and claims 17-19 are distinguished over the cited art, including Kurtz.

Further in view of the foregoing, it is respectfully submitted that the present application is now in condition for allowance, and such action is earnestly solicited.

Respectfully submitted,

Dated: June 30, 2004

Alfred A. Fressola
Attorney for Applicant
Reg. No. 27,550

WARE, FRESSOLA, VAN DER SLUYS
& ADOLPHSON LLP
Bradford Green, Building Five
755 Main Street, P.O. Box 224
Monroe, CT 06468
Telephone: (203) 261-1234
Facsimile: (203) 261-5676
USPTO Customer No. 004955

sprüche,
dadurch gekennzeichnet,
daß die Kontur (10) des Umlenkelementes (9) die Innenfläche eines Torusabschnittes hat, dessen Zentrum mit dem der Behandlungswerkzeuge zusammenfällt.

Claims

1. A device for dispersing high-consistency waste paper, comprising at least two treatment tools (1, 2) which are movable relative to one another,

   1.1 which each have a substantially rotationally symmetrical form and are arranged coaxially to one another,
   1.2 which have teeth (3, 3', 3", 4, 4', 4") in annular rows concentric to their centre, between which tooth spaces are located which form free cross-sections through which the pulp to be treated can flow,
   1.3 which have annular gaps (11) between the rows of teeth,
   1.4 which are positioned relative to each other such that at least one row of teeth of a treatment tool (1, 2) extends into an annular gap (11) in the other, complementary, treatment tool (2, 1),
   1.5 the device containing at least one discharge device (8) for the pulp which emerges radially outwards,

   characterised in that
   the discharge device (8) contains a deflecting element (9) with a profile(10) which is shaped such that it deflects radially-emerging pulp into approximately an axial direction, without dispersion of the waste paper being able to take place, and that the treatment tool (2) which is movable relative to the housing (6) of the device is provided in the region of the external diameter with at least one radial projection (7) which extends beyond the radially outermost edge.

2. A device according to Claim 1,
   characterised in that
   one treatment tool (1) is associated with a fixed stator (6) and the complementary treatment tool (2) with a drivable rotor (5).

3. A device according to Claim 2,
   characterised in that
   the axis of rotation is horizontal.

4. A device according to Claim 1, 2 or 3,
   characterised in that
   that at least one radial projection (7) forms part of the movable treatment tool (2).

5. A device according to Claim 2,
   characterised in that
   the radial projecting length (b) of the radial projection (7) beyond the periphery of the rotor (5) is between 3 and 50 mm.

6. A device according to Claim 5,
   characterised in that
   the radial projecting length (b) of the radial projection (7) beyond the periphery of the rotor (5) is between 3 and 20 mm.

7. A device according to one of the preceding claims,
   characterised in that
   the radial projection (7) in the peripheral direction has on at least one side a surface (A, A') which is at an approach angle (α) to the radius of between 10° and 45°.

8. A device according to one of the preceding claims,
   characterised in that
   the peripheral extent (c) of the radial projection (7) has an angle of between 3° and 15°.

9. A device according to one of Claims 1 to 7,
   characterised in that
   the peripheral extent (c) of the radial projection (7) has an angle of 360°.

10. A device according to one of the preceding claims,
    characterised in that
    one treatment tool (2) has a single radial projection (7).

11. A device according to one of the preceding claims,
    characterised in that
    the radial projection (7) extends non-axially into the treatment region of the complementary treatment tool.

12. A device according to one of the preceding claims,
    characterised in that
    the profile (10) of the deflecting element (9) covers a peripheral angle (d) of between 180° and 300° and extends substantially above the treatment tools.

13. A device according to one of the preceding claims,
    characterised in that
    the profile (10) of the deflecting element (9) has the inner surface of a torus section, the centre of which coincides with that of the treatment tools.

Revendications

1. Dispositif destiné à la dispersion de vieux papiers de haute consistance, comportant au moins deux